REMARKS

Claims 1-29 are pending. Claims 1-29 were rejected. Independent claims 1, 6, 11, 17, and 26 were rejected under 35 U.S.C. 112(2) as being indefinite. Independent claims 1, 6, 11, 17, and 26 were rejected under under 35 U.S.C. 103(a) as being unpatentable over Jindal (6,092,178) in view of Herrman (6,522,651).

The Examiner rejected independent claims 1, 6, 11, 17, and 26 as being indefinite. The Examiner argued that it is unclear which network entity is performing "receiving a request", "providing a response", "providing a padded response" and "transmitting a padded response." The Applicants respectfully submit that the claim language is not vague. A variety of entities can perform the recitations noted above. In one example, a content server receives a request, provides a response, provides a padded response generated using the response, and transmits the padded response.

The Examiner also argues that lines 6-7 state network requirements allow transmission without padding. The Examiner notes that line 8 recites providing a padded response. It is respectfully submitted that this is consistent. In one particular example, the content server receives a request for data. The content server provides a response. However, before transmitting the response, the response is padded even though network requirements do not require padding. Consequently, a response and a padded response are provided. However, a padded response is transmitted even though the response can be transmitted without padding.

"A content server can pad a datagram with network layer padding 313 by altering the length of the datagram specified in network layer header 309. The length specified in the transport layer header 301 encapsulated in network layer data area 311 is left unaltered. The transport layer header 301 specifies that the transport layer data area is 700 octets. The network layer header 309 specifies that the network layer total length is 1900 octets with 800 octets of padding." (page 16, lines 15-21)

The Examiner also states that it is unclear how information is provided for selecting a server. "According to specific embodiments, content server 115 can also pad response datagrams to provide network information to the network node associated with the client 101 ... The reply datagram can be padded with an arrangement of bits to create an altered response datagram. When a router 112 receives the padded reply message ... The router 112 then determines whether to queue, drop, transmit the datagram. The router 112 may use best-effort delivery and transmit the datagram when bandwidth is available. If no bandwidth is available, the router 112 may leave the packet in the queue for a certain period of time. If this period of

time expires, the packet may be dropped. The router may also use a variety of traffic shaping and policing algorithms to determine whether the packet should be transmitted. Typically, the larger the datagram, the less likely the datagram will be immediately transmitted unless ample bandwidth is available." (page 13, line 22 – page 14, line 15) In one example, if a nonpadded datagram is transmitted successfully, the client knows that some bandwidth is available. If a significantly padded datagram is transmitted successfully, information that ample bandwidth is available is provided to a client.

The Examiner also states that it is unclear how the network layer length is greater than the transport layer length and the network layer header length. In many conventional implementations, the network layer length is the same as the transport layer length and the network layer header length. This is shown in Figure 3.

According to various embodiments, "Prior to transmission, the content server 115 increases the layer three length while leaving the layer four length unaltered. The reply datagram can be padded with an arrangement of bits to create an altered response datagram. When a router 112 receives the padded reply message, it identifies the length of the message based on the layer three length. This can be the total length field of an IP datagram, which is limited to 65,535 octets." (page 14, lines 2-7). Consequently, padding can be accomplished by simply adjusting the header length field without even adding bits. One example is shown in Figure 3. Claim 6 has also been amended to correct informalities.

Based on the above remarks and the minor amendments to claim 6, all 35 U.S.C. 112 rejections are believed overcome.

The Examiner cites Jindal and Hermann for the 35 U.S.C. 103(a) rejection of independent claims. Jindal describes a trigger "for taking action in response to a client request received at a DNS server… client requests for an application (e.g., an application program or replicated service) are load-balanced among the multiple instances of the application operating on multiple servers." "In order to enhance load balancing of the application, various information is collected from the application instances and, possibly, the servers hosting those instances. The collected information concerns the status (e.g., operational or not operational) and/or operational characteristics (e.g., number of client requests, response time, throughput) of the instances and/or servers." "Based on the collected information, one or more preferred servers are identified based on one or more load balancing policies." (Summary)

However, as noted by the Examiner, Jindal fails to explicitly teach "providing a padded response datagram, wherein the padded response datagram is obtained by padding the response datagram with an arrangement of bits" as recited in independent claims 1, 6, 11, 17, and 27. The

datagram is padded even when "network requirements allow transmission of the response datagram to the network node without padding the response datagram" as recited in claims 1, 11, 17, and 27. The techniques of the present invention recognize that "typically, the larger the datagram, the less likely the datagram will be immediately transmitted unless ample bandwidth is available." (page 14, line 15) Padding a datagram when a datagram can be transmitted is counterintuitive because it seems to increase inefficiency without any benefits. However, the techniques of the present invention recognize that padding a datagram prior to transmission even if network requirements allow transmission without padding can provide information to a user. "Typically, the larger the datagram, the less likely the datagram will be immediately transmitted unless ample bandwidth is available." (page 14, line 15)

Jindal also fails to explicitly teach providing that "the network layer length is greater than the sum of the transport layer length and the network layer header length" as is explicitly recited in independent claim 6.

Herrmann notes that "two examples of transmission, or transport networks defined with packets size of constant length are considered: MPEG-2 Transport Stream (MPEG-2 TS) and the Asynchronous Transfer Mode (ATM). MPEG-2 TS packets are 188 bytes long, including a header of 4 bytes and a payload of 184 bytes, while ATM cells are 53 bytes long, including a header of 5 bytes and a payload of 48 bytes. As the packet size is constant with these networks, there is a problem to fit the last segment of an Access Unit, in the case of MPEG-4 data. It is here proposed to use a padding mechanism in order to build the last part of the last segment to be transmitted over the network." (Detailed Description Paragraph 4). ATM cells require a fixed "packet size." Consequently, a padding mechanism is used "in order to build the last part of the last segment to be transmitted over the network" as required by ATM.

However, Herrmann does not teach or suggest providing a padded response datagram when "network requirements allow transmission of the response datagram to the network node without padding the response datagram" as variably recited in claims 1, 11, 17, and 27. The padding described in Herrmann is required as ATM cells are of "fixed packet size."

Furthermore, Herrmann does not teach or suggest having a network layer length "greater than the sum of the transport layer length and the network layer header length." The material cited by the Examiner only describes calculating a network packet size as the network packet header size added to the network payload size. Herrmann makes no mention of transport layer lengths. However, the techniques of the present invention recite a network layer length "greater than the sum of the transport layer length and the network layer header length."

Dependent claim 14 also recites "wherein reception of the padded response datagram by the network node provides bandwidth availability information to the network node." Neither Jindal nor Herrmann are believed to teach or suggest this recitation. The techniques of the present invention recognize that receiving a padded datagram in itself can provide valuable information. For example, "limited network bandwidth may prevent router 112 from transmitting a padded reply message to a local domain name server 103 even though a non-padded message may have been successfully transmitted. Other content servers 117, 121, and 119 may or may not be padding corresponding reply messages." (page 14, lines 16-19).

In light of the above remarks relating to independent claims 1, 9, and 19 and to dependent claim 22, the remaining dependent claims 2-8, 10-18, and 20-21 are believed allowable for at least the reasons noted above.

Applicants believe that all pending claims are allowable and respectfully request a Notice of Allowance for this application from the Examiner. Should the Examiner believe that a telephone conference would expedite the prosecution of this application, the undersigned can be reached at the telephone number set out below.

Respectfully submitted,
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